K'LININ S. K.

172T69

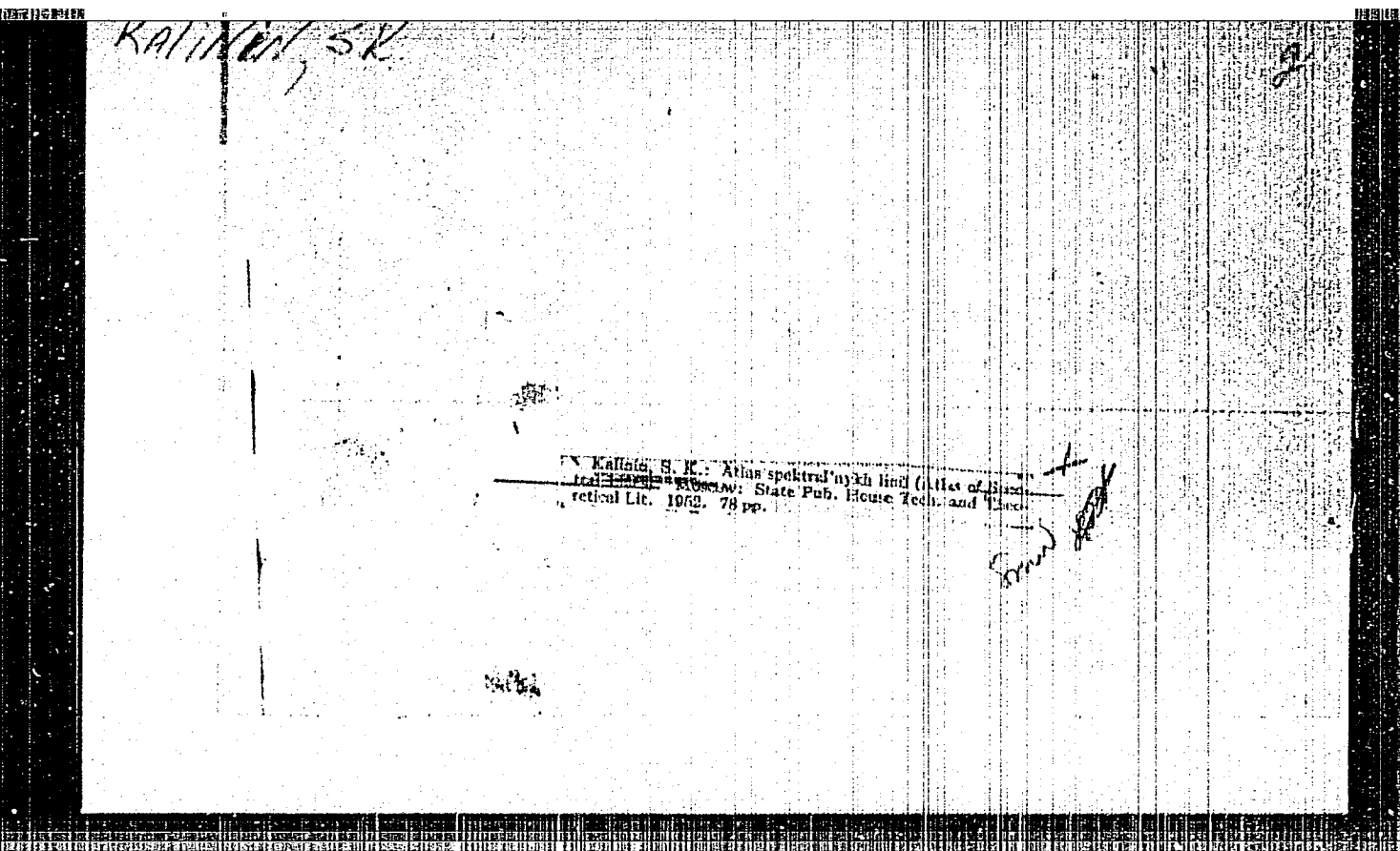USSR/Metals - Spectrography   Sep/Oct 50

"Atlas of Spectral Lines for the Quartz Spectrograph
Within the Range 2,050-2,500 and 3,500-6,900 A," S. K.
Kalinin, A. I. Alekseyeva, A. A. Yavnel, L. E. Naymark,
Inst of Astr and Phys, Acad Sci Kazakh SSR

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIV, No 5, pp 701, 702

Subject atlas, necessary for processing of analyses,
consists of 15 charts, giving Fe spectrum in 20-fold
enlargement as reference.

172T69

Kalinin, S.K.

Kalinin, S. K.: Atlas spektral'nykh linii (Atlas of Spectral Lines) Moscow: State Pub. House Tech. and Theoretical Lit. 1952. 78 pp.

KALININ, S.A.

KALININ, S.K.; YAVNEL', A.A.; NAYMARK, L.E.

[Tables of arc and spark spectra of iron from 2084 to 6546 A] Atlas
dugovogo i iskrovogo spektrov zheleza ot 2084 do 6546 A. Moskva, Gos.
nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953.
(MLRA 7:6)

(Iron) (Spectrum analysis--Tables, etc.)

Kalinin, S. K.

Fluorine content of some natural waters of Kazakhstan from spectrum-analytical data. I. F. Novokhatskii and S. K. Kalinin. (Acad. Sci. Kazakh. S.S.R., Alma-Ata). Doklady Akad. Nauk S.S.S.R. 63, 589-91(1953).—The presence of F in waters was studied by the sharp green band, 5291.0 A, which becomes visible with 0.05-0.1% F. Results obtained by spectroscopy were compared with chem. analysis data. High F content (> 1% in solid evapd. residue) was found in the hot springs in Tien-Shan and in wells from granites and lakes in granite massives. No F was found in limestone-mine waters.   W. M. Sternberg

USSR/ Miscellaneous - Spectral analysis

Card 1/1   Pub. 43 - 92/97

Authors   : Kalinin, S. K.; Yavnel', A. A.; and Neymark, I. E.

Title   : Atlas of Fe arc and spark spectra

Periodical   : Izv. AN SSSR. Ser. fiz. 18/2, page 297, Mar-Apr 1954

Abstract   : Notice is given about the publication in 1953 of an atlas listing all
                the arc and spark spectra for iron.

Institution : ......

Submitted   : ......

KALININ, S.K.

USSR/ Physics - Spectrography

Card 1/1   Pub. 123-7/14

Authors   : Kalinin, S. K., and Marzuvanov, V. L.

Title   : New atlas of arc and spark spectra of Fe

Periodical   : Vest. AN Kaz. SSR, 1, 59 - 61, Jan 1955

Abstract   : The compilation of an atlas, showing the arc and spark spectrum of Fe in
               the most important zone of the spectrum, is announced. The first part of
               the atlas comprises the ultrviolet zone and is intended as an aid to quartz
               spectrography of average dispersion. The second part of the atlas intended
               for visible and infra red spectroscopy is now being completed. The atlas
               contains many illustrations showing arc and spark spectra of Fe obtained
               by means of the three-lens glass spectrograph ISP-51 with UF-84 camera.
               Two USSR references (1953 and 1954). Table; illustrations.

Institution: /....

Presented by: Tikhov, G. A. Memb. of Acad. of Sc. Kaz-SSR

KALININ,S.K.

Atlas of spectral lines for steel spectrographs. Izv. AN SSSR.
Ser. Fiz. 19 no.1:42-44 Ja-F '55.   (MIRA 8:9)

1. Fiziko-tekhnicheskiy institut Akademii nauk KazSSR
         (Spectrum analysis) (Spectrometer)

Kalinin, S.K

BUYANOV, N.V., kandidat tekhnicheskikh nauk.

Review of the book "Atlas of arc and spark spectra of iron" by S.K.Kalinin, A.A.IAvnel', L.E.Naimark. Reviewed by N.V.Buianov. Zav.lab.21 no.9:1143 '55.   (MLRA 9:1)

(Iron--Spectra) (Kalinin, S.K.) (IAvnel, A.A.) (L.E.Naimark)

KALININ, S.K..; NAYMARK, L.E.,; MARZUVANOV, V.L.,; ISMAGULOVA, K.I.;
RUSANOV, A.K.,professor,doktor tekhnicheskikh nauk, redaktor;
POTAPOV, V.S.redaktor izdatel'stva; GUROVA, O.A.,tekhnicheskiy
redaktor

[Atlas of spectrum lines for a glass spectrograph; explanatory
text and 26 diagrams] Atlas spektral'nykh linii dlia stekliannogo
spektrografa; poiasnitel'nyi tekst i 26 planshetov. Pod red.
A.K. Rusanova. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol.
i okhrane nedr, 1956. 45 p., 26 l.   (MLRA 10:4)
          (Spectrum analysis--Tables, etc.)

KALININ, S. K.

Category: USSR   D

Abs Jour: RZh--Kh, No 3, 1957, 7842

Author : Novokhatskiy, I. P. and Kalinin, S.K.
Inst   :
Title   : The Application of Spectroscopic Analysis to Geologic Investi-
          gations

Orig Pub: Vestn. AN KazSSR, 1956, No 5, 13-21

Abstract: The fields of application of spectroscopic analysis in geological
          and geochemical investigations under Kazakhstan conditions are
          discussed. The following applications are recommended: (1) large-
          scale semiquantitative analysis of ores, minerals, and rocks;
          (2) determination of the composition of individual minerals; (3)
          prospecting for ores in the aureoles and solution paths; (4) identi-
          fication and study of petrochemical and metallogenic districts;
          (5) study of the composition of natural waters.

Card   : 1/1   -25-

KALININ, S. K.

USSR/Physical Chemistry - Atom   B-3

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14341

Author : Grinman I. G., Kalinin S. K., and Murzuvanov V L.
Inst   :
Title   : The Problem of the Systematization of Atomic Spectra

Orig Pub: Vestn. AN KazSSR, 1956, No 9, 85-89

Abstract: The notice reports the compilation of an atlas of
          mercury spectra by various authors. The atlas consists
          of three parts: (1) description of the series, systems
          of energy levels, (2) tables of wave lengths, energy
          levels, and line intensities, (3) photograph of the
          spectrum which includes the region of 2200-10140A. The
          spectrum of Hg III and of much higher degrees of ioniza-
          tion is not covered in the atlas.

Card 1/1

KALININ, S.K.

32-9-42/43

AUTHOR: None given

TITLE: New Books (Novyye knigi)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 9, pp.1143-1143 (USSR)

ABSTRACT: The Application of Electron Microscopy. A collection of lectures
            delivered on the European Congress on the Application of Electron
            Microscopy. 1957, 166 pages, Roubles 6.40
            The Application of the Methods of Spectroscopy in the Food Industry
            and in Agriculture. Material dealing with the conference held on
            4-7 July 1955 at Leningrad. 1957, 254 pages, Roubles 14.-
            Kalinin, S.K., Marzuvanov, V.L., Fayn, E.D. Spectral Lines for the
            Analysis of Mineral Raw Materials. 35 pages, 1957
            Sigorskiy, V.P., Sinitskiy, L.A. Magneto-Electric Logometers,
            199 pages
            Devices for Measuring Electric and Magnetic Quantities. A collection
            of articles. 19 pages, 1957
            Popova, N.M. Phase-Chemical Steel Analysis. 1957, 39 pages
            Konokotin, S.G., Grechko, F.M. Semiconductor-Thermo-Telemeasuring

Card 1/2   Devices. 20 pages, 1957

KALININ, S.K.; FAYN, E.Ye.; GRINMAN, I.G.; ZHILINSKIY, G.B.

Spectrographic determination of rare earths in minerals. Trudy
Inst.iad.fiz.AN Kazakh.SSR 1:288-295 '58.   (MIRA 12:2)
              (Rare earths--Spectra)

GRINMAN, I.G.; KALININ, S.K.; MARZUVANOV, V.L.; FAYN, M.Ye.

Investigation of the power of an electric arc for spectrum
analysis. Trudy Inst.iad.fiz.AN Kazakh.SSR 1:296-302 '58.
                                                        (MIRA 12:2)
       (Spectrum analysis)   (Electric arc)

S. K. KALININ

24(7)

Lvov. Universitet

PHASE I BOOK EXPLOITATION   SOV/1700

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii, 1956.
t. 1: Atomnaya spektroskopiya. (Materials of the 10th All-Union
Conference on Spectroscopy, 1956. Vol 2: Atomic Spectroscopy)
(Lvov) Izd-vo L'vovskogo univ.; 1958. 563 p. (Series: Ikh:
Uchenyy sbornik, v79.4(9)) 3,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po
spektroskopii.

Editorial Board: G.S. Landsberg, Academician, (Resp. Ed.);
S.L. Mandel'shtam, Doctor of Physical and Mathematical Sciences;
V.L. Fabelinskiy, Doctor of Physical and Mathematical Sciences;
V.G. Korizkiy, Candidate of Technical Sciences; S.M. Rayskiy,
Candidate of Physical and Mathematical Sciences; L.K. Klimovskaya,
Candidate of Physical and Mathematical Sciences; V.S. Milyanchuk
(Deceased), Doctor of Physical and Mathematical Sciences; A.Ye.
Glauberman, Doctor of Physical and Mathematical Sciences;
M.; S.L. Gazer; Tech. Ed.: T.V. Saranyak.

PURPOSE: This book is intended for scientists and researchers in
the field of spectroscopy, as well as for technical personnel
using spectrum analysis in various industries.

COVERAGE: This volume contains 177 scientific and technical studies
of atomic spectrography presented at the 10th All-Union Confer-
ence on Spectroscopy in 1956. The studies were carried out by
members of scientific and technical institutes and include
extensive bibliographies of Soviet and other sources. The
studies cover many phases of spectroscopy: spectra of rare earths,
electromagnetic radiation, physicochemical methods for controlling
uranium production, physics and technology of gas discharge,
optics and spectroscopy, abnormal dispersion in metal vapor,
spectroscopy and the combustion theory, spectrum analysis of ores
and minerals, photographic methods for quantitative spectrum
analysis of metals and alloys, spectral determination of the
hydrogen content of metals by means of isotopes, tables, and
atlases of spectral lines, spark spectrographic analysis,
statistical study of variation in the parameters of calibration
curves, determination of traces of metals, spectrum analysis in
metallurgy, thermochemistry in metallurgy, and principles and
practice of spectrochemical analysis.

Card 2/31

Materials of the 10th All-Union Conference (Cont.)   SOV/1700

Malemed, Sh.O., and A.M. Saltykova. Spectrographic
   Determination of Tin, Lead, Antimony, and Cadmium in
   Titanium, Zirconium, Tantalum, and Niobium   181

Rabinshtern, R.M., and N.G. Karpel'. Spectral Determination
   of Organic Impurities on the Surface of Metal Parts   182

Rusanov, A.K., and N.V. Il'yasova. Atlas for the Identification
   of Flame Spectra of Elements of 2,800-9,000 Å Wavelengths   184

Alekseyeva, A.I., I.G. Griman, S.K. Kalinin, Yu. A. Kuznikov,
   and V.L. Marzuvanov. First Edition of the Spectral Atlas
   of Elements: The Mercury Spectrum   185

Gurevich, I.M. The UIP-1 Pulse Photometer for Measuring
   Instantaneous Luminous Flux   187

Boretkov, Yu. A., and M.M. Rozkov. Photoelectric Method
   for Recording Contours of Spectral Lines in a D-C Arc   188

Berf, O.P.; A.I. Rymov, and D.A. Shklover. Spectral Charac-
   teristics of Ultraviolet Radiation Sources and Receivers   190

Card 12/31

KALININ, S.K.; MARZUVANOV, V.L.; FRISH, S.E., red.; EVANSON, I.M., tekhn. red.

[Atlas of spark and arc spectra for iron from 3718 to 9739 Å] Atlas dugovogo i iskrovogo spektrov zheleza ot 3718 do 9739 A. Pod red. S.E. Frisha. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1958. 47 p. and 21, xvii plates (in portfolio).   (MIRA 11:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Frish).
                        (Iron—Spectra)

KALININ, S. K.

with E. Ye. Fayn, I. G. Grinman, and G. B. Zhilinskiy "Spectroscopic Determination of Rare Earths in Minerals"

with I. G. Grinman, V. L. Marzuvanov, and E. Ye. Fayn "Study of Electric-arc Output for Spectrum Analysis"

Transactions of the Inst. of Nuclear Physics, Kazakh SSR, Acad. Sci. Trudy, v. i., Alma-Ata, Izd-vo AN Kaz SSR, 1958,
This vol. contains results of research at the Inst. of Nuclear Physics for the years 1954-56.

KALININ, S.K.; MARZUVANOV, V.L.

Characteristics of arc discharges in an atmosphere of chlorine.
Vest. AN Kazakh.SSR 14: no.9:73-81 S '58.   (MIRA 11:11)
    (Electric discharges through gases) (Chlorine)

24(4)   PHASE I BOOK EXPLOITATION   SOV/3309

Akademiya nauk Kazakhskoy SSR.   Fiziko-tekhnicheskiy institut

Atlas spektra rtuti (Atlas of Mercury Spectrum) Alma-Ata, Izd-vo
    AN Kazakhskoy SSR, 1959.   1. v. [10 plates in pocket] 1,000
    copies printed.

Compilers: A.I. Alekseyeva, I.G. Grinman, S.K. Kaltnin,
    Yu.A. Kushnikov, and V.L. Marzuvanov; Eds.: S.E. Frish,
    Professor, Corresponding Member, USSR Academy of Sciences, and
    R.I. Suvorova; Tech. Ed.: Z.P. Rorokina.

PURPOSE: The publication is intended as a reference book for
    scientific research workers and engineers.

COVERAGE: The atlas contains photos of the mercury spectrum in
    the ultraviolet region, made on quartz spectrograph ISP-22
    (magnified 8 times) and in the infrared region, made on
    spectograph ISP-51 with long-focus camera (magnified 6 times).
    The explanatory table indicates wavelength, wave numbers,

Card 1/2

PHASE I BOOK EXPLOITATION   SOV/4045

Kalinin, S.K., A.A. Yavnel', A.I. Alekseyeva, V.L. Marzuvanov, and L.E. Naymark

Atlas spektral'nykh liniy dlya kvartsevogo spektrografa (Atlas of Spectral Lines
    for the Quartz Spectrograph). Moscow, Gosgeoltekhizdat, 1959. 43 p.
    23 charts [in portfolio] Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk Kazakhskoy SSR. Fiziko-tekhnicheskiy institut.

Ed. of Publishing House: V.G. Filatov; Tech. Ed.: O.A. Gurova.

PURPOSE: This work is intended for use in spectral analysis laboratories,
    scientific institutions, industrial and geological laboratories, and other sim-
    iliar research establishments.

COVERAGE: This atlas of spectral lines, published under the auspices of the
    Commission on Spectroscopy of the Academy of Sciences, USSR, consists of a
    booklet and 23 photographic plates. The booklet contains quartz spectrograph
    spectral lines for 72 elements and tables on the excitation potentials of the
    lines and the ionization potentials of the elements which have great signifi-
    cance for the selection of analytic lines in quantitative spectral analysis.
Card 1/6

Atlas of Spectral Lines for the Quartz Spectrograph   SOV/4045

The tables contain information on the overlapping of analytic lines by the
lines of other elements. They can also be used in the spectral analysis of
rocks, ores, minerals, soils, metals, and alloys. The atlas was composed by
means of the ISP - 22 quartz spectrograph (the new model is the ISP - 28)
and the PS - 18 spectroprojector. It is able to reproduce exactly the
dimensions and forms of a spectrum obtained in most Soviet laboratories and
can also be used with other average-dispersion devices whose parameters
resemble closely the ISP - 22 spectrograph (Q - 24, E - 488, etc). The atlas
makes it possible to break down the spectrum of various materials into the
72 elements in the whole range of the spectrum recorded by the spectrograph
(2050 - 6800 $_A$). The authors thank S.L. Mandel'shtam, Professor A.K. Rusanov,
and S.M. Rayskiy. There are 25 references: 14 Soviet, 6 English, 3 German,
1 French and 1 Italian.

TABLE OF CONTENTS:

Card 2/6

24(7)   SOV/48-23-9-4/57
AUTHORS: Kalinin, S. K., Marzuvanov, V. L., Fayn, E. Ye., Zamyatina,
              G. M., Perevertun, V. N., Terekhovich, S. L.

TITLE: Atlas of Spectral Lines for a Spectrograph With Diffraction
              Grating

ABSTRACT: In connection with the series production of diffraction grat-
              ing spectrographs, the necessity of methodical directives
              and of atlases is pointed out. At present, the authors are
              preparing an atlas of spectral lines for grating spectrographs.
              The atlas consists of plane tables (planshet) and of their
              descriptions. In figure 1, for example, the iron spectrum in
              a range extending over 66 Å is shown. This spectrum was record-
              ed by means of the DFS-3 spectrograph, the grating of which
              has 300 grating lines per mm. The spectra recorded were en-
              larged 20 times and the lengths of the plane tables amount
              to 370 mm, so that, for example, the entire iron spectrum has
              a total length of 25 m. Owing to the high dispersion of the
              instrument about 7000 lines of 85 elements are recorded, and
Card 1/2   the intensity of the lines is estimated according to a 12-degree

SOV/48-23-3-4/57
Atlas of Spectral Lines for a Spectrograph With Diffraction Grating

scale; if the sample contains more than 10% of the element,
the lines are marked by the figure 1, and if it contains less
than 0.0001%, by the figure 12. In the description the proper-
ties of the lines are discussed, and directives are given
for carrying out analyses. There are 1 figure and 3 Soviet
references.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk KazSSR
(Institute of Nuclear Physics of the Academy of Sciences
of the Kazakhskaya SSR)

Card 2/2

PHASE I BOOK EXPLOITATION   SOV/4570

Kalinin, Sergey Ksenofontovich

Primeneniye difraktsionnogo spektrografa DFS-3 (13) dlya analiza mineral'nogo
    syr'ya (Use of the DFS-3(13) Diffraction Spectrograph for the Analysis
    of Mineral Raw Materials) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1960. 35 p.
    1,000 copies printed.

Sponsoring Agency: Akademiya nauk Kazakhskoy SSR.

Ed.: K.Kh. Barlybayeva; Tech. Ed.: V.P. Prokhorov.

PURPOSE: This book is intended for spectroscopy specialists working in the analy-
    sis of ores, minerals, and alloys.

COVERAGE: This work describes analysis techniques with a high-dispersion diffrac-
    tion spectrograph. The characteristic optical properties of the instrument are
    given. The authors discuss experience in using this instrument in the deter-
    mination of small quantities of individual elements, bismuth, tungsten, german-
    ium, rhenium, thallium, zinc, etc., as well as various spectrographs developed
    and produced by Soviet industry. This book gives the results of an investiga-
    tion of the characteristics of a DFS-13 type spectrograph and compares them
Card 1/3

Use of the DFS-3 (Cont.)   SOV/4570

with the characteristics of known prismatic spectrographs. Special attention is given to the possibilities of using such instruments in the spectral analysis of mixed-composition samples (mainly ores). The authors used the DFS-3 spectrograph in their investigations, but their conclusions are applicable to the DFS-13. The Preface was written by Professor V.K. Prokof'yev, Honored Scientist and Technician of the RSFSR. There are 16 references, all Soviet.

TABLE OF CONTENTS:

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PHASE I BOOK EXPLOITATION   SOV/4405

Kalinin, Sergey Ksenofontovich, Vasiliy Leonidovich Marzuvanov,
Lyubov' Efroymovna Naymark, and Kul'tay Ismagulovna
Ismagulova

Atlas spektral'nykh liniy dlya steklyannogo spektrografa (Atlas
of Spectrum Lines for the Glass Spectrograph) [2d ed., rev.]
Alma-Ata, Izd-vo AN KazSSR, 1960. 61 p. Errata slip in-
serted. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk Kazakhskoy SSR.

Ed.: V. V. Aleksandriyskiy; Tech. Ed.: Z. P. Rorokina.

PURPOSE: This atlas is intended for spectroscopy experts work-
ing on the analysis of ores, metals, and alloys.

COVERAGE: The atlas contains photographs of an arc spectrum
of iron in the range of 3718-9010 Å on which the location
of more than 1,300 of the most intensive spectral lines of
81 elements, including inert gases and plutonium, are re-
corded. Wavelength tables of spectrum lines include

Card 1/10

Atlas of Spectrum Lines (Cont.)   SOV/4405

excitation and ionization potentials. Detailed descrip-
tion of the atlas and instructions on its use in spectral
analysis are also given. Soviet equipment, namely, a
three-prism glass spectrograph ISP-51 with a UF-84 chamber
and a PS-18 spectroprojector, was used in compiling the
atlas which is intended for rapid interpretation of the
visible and near infrared regions of the spectra of rocks,
ores, soils, natural waters, metals, alloys, and bio-
logical materials. The Editor's Preface was written by
A. K. Rusanov, Professor, Doctor of Technical Sciences.
The Institut yadernoy fiziki Akademii nauk Kazakhskoy
SSR (Nuclear Physics Institute of the Academy of Sciences,
Kazakh SSR) is the sponsoring agency. The authors thank
A. R. Striganov, S. M. Rayskiy, N. S. Sventitskiy, and
V. G. Koritskiy. There are 119 references: 112 Soviet,
6 English, and 1 German.

TABLE OF CONTENTS:

Card 2/19

SATPAYEVA, T.A.; KALININ, S.K.; FAYN, E.Ye.

Amount of osmium in ores of the Dzhezkazgan deposit. Vest.AN
Kazakh.SSR 16   no.8:29-31 Ag '60.   (MIRA 13:9)
        (Dzhezkazgan District--Osmium)

KALININ, Sergey Ksenofontovich; FAYN, Emil' Yefraimovich; STRIGANOV,
A.R., doktor fiziko-matem. nauk, prof., otv. red.; RZHONDKOVSKAIA,
L.S., red.; ALFEROVA, P.F., tekhn. red.

[Spectrum analysis of raw minerals] Spektral'nyi analiz mineral'-
nogo syr'ia. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR, 1962.
238 p.   (MIRA 15:7)
        (Minerals—Analysis)   (Spectrum analysis)

S/031/62/000/012/002/002
B142/B186

AUTHORS: Satpayeva, T. A., Kalinin, S. K., Satpayeva, M. K.,
Marzuvanov, V. L. ————————————

TITLE: Peculiarities of rhenium manifestation in ores from the
Dzhezkazgan deposit

PERIODICAL: Akademiya nauk Kazakhskoy SSR. Vestnik, no. 12 (213),
1962, 58-65

TEXT: Re is widely spread in the copper deposit mentioned in the form
of an independent mineral in a thin-dispersed state. The occurrence
extends over the whole deposit and veinlets and spots are pu·ti ·'arly
frequent in highly mineralized sections. The rhenium mineral is bound
to hypogenic bornite-chalcocite ores separated toward the end of th· first
copper mineralization period. In the solution that liberated pure
bornite, the rhenium was, in part, highly concentrated, so that rheniu
mineral of spongy structure was precipitated in the bornite. It was onl;
toward the end of the bornite-chalcocite sedimentations that small amounts
of the rhenium mineral were separated as finest, pure grains and

Card 1/3

Peculiarities of rhenium ...

S/031/62/000/012/002/002
B142/B186

constituted replacement structures in the bornite and in the accompanying rutile. The following properties were found: Color: pale pink - cream, on small magnification. On higher magnification, darker, brown, blurred spots became visible in the bright ground mass; they were identified by electron microscope as finest intergrowths of rhenium mineral with bornite. Reflecting power: ~30% in the bright sections, 26-27% in the dark spots, depending on the wavelength. Microhardness: 208.7-261.0 kg/mm^2. Optics: very weakly anisotropic. Etching: concentrated HNO_3 does not change the bright parts of the Re mineral, but only the dark spots. 20% KCN solution colors the surface slightly brown. A local spectrum analysis showed that the Re to Mo ratio was more stable than the ratio of Re to other ore-forming elements. The chemism could not be determined since the x-ray spectrum microanalyzer covers a volume of 3-10 μ^3 which, in the case of Re mineral, already comprises bornite and chalcocite inclusions. The Re mineral showed the same structure in the polarising and the electron microscopes: finest Re mineral veins at the edge of the bornite grains are entangled, and increasingly so toward the middle, forming a dense network with the bornite in its meshes. This makes it impossible to isolate the Re mineral chemically, hence the measured

Card 2/3

Peculiarities of rhenium ...

S/031/62/000/012/002/002
B142/B186

physical data are of doubtful dependability. A study of the Re mineral intergrowths with rutile might help here, but hitherto it has been possible to render them visible, only by immersion in oil, which made the measurements difficult. The results show that this is an independent Re mineral for which the name "dzhezkazganite" has been proposed. There are 33 figures and 2 tables.

ASSOCIATION: AN KazSSR (AS KazSSR); Dzhezkazganskiy gorno-metallurgicheskiy kombinat (Dzhezkazgan Mining and Metallurgical Combine)

Card 3/3

L 36249-65
ACCESSION NR: AT5007815

optical density of complexes formed by the rare earth elements with Arsin

KALININ, S.K.; MARZUVANOV, V.L.; MUKHTAROV, S.M.

[Atlas of the arc spectrum of iron] Atlas dugovogo
spektra zheleza. Moskva, Metallurgiia, 1965. 54 plates
in folder. ___ [Text] 55 p.   (MIRA 19:1)

KALININ, S. M.

"Effect of Fertilizers on the Potato Crop in the Southeast." Cand Agr Sci, Saratov Agricultural Inst, Saratov, 1953. (RZhBiol, No 1, Sep 54)

SO: Sum 432, 29 Mar 55

USSR/Nuclear Physics - Tritium

Card 1/2   Pub. 146 - 2/34   FD-2337

Author   :   Vlasov, N. A.; Kalinin, S. P.; Ogloblin, A. A.; Samoylov, L. N.;
                Sidorov, V. A.; and Chuyev, V. I.

Title   :   Interaction of protons with tritium, and the excited state of
                helium-4

Periodical :   Zhur. eksp. i teor. fiz. 28, 639-650, Jun 1955

Abstract   :   The authors describe experiments investigating the reactions $T(pn)$
                He^3 and $T(p\gamma)He^4$ in the interval of proton energies up to 7 Mev.
                The energy of the protons in the beam from the cyclotron chamber
                was varied by way of slowing in lead filters. Serving as detec-
                ectors of the neutrons were so-called all-wave counter and uranium
                chamber; a scintillational counter served as detector of the gamma
                rays, with NaI(Tl). The curve of cross-section, sigma, versus
                proton energy, E_p, for the first reaction possesses a maximum at
                $E_p=3$ Mev. For the second reaction the cross-section increases
                monotonically in the entire energy interval. Also investigated
                were the angular distributions of neutrons and gamma rays. The
                characteristics of the excited state of helium-4 are discussed.
                The authors thank the associates of the Cyclotron Laboratory, and

USSR/Nuclear Physics - Tritium   FD-2337

Card 1/2   Pub. 146 - 2/34

Author   : Vlasov, N. A.; Kalinin, S. P.; Ogloblin, A. A.; Samoylov, L. N.;
               Sidorov, V. A.; and Chuyev, V. I.

Title   : Interaction of protons with tritium, and the excited state of
               helium-4

Periodical : Zhur. eksp. i teor. fiz. 28, 639-650, Jun 1955

Abstract   : The authors describe experiments investigating the reactions $T(pn)$
               He^3 and $T(p\gamma)He^4$ in the interval of proton energies up to 7 Mev.
               The energy of the protons in the beam from the cyclotron chamber
               was varied by way of slowing in lead filters. Serving as detec-
               tors of the neutrons were so-called all-wave counter and uranium
               chamber; a scintillational counter served as detector of the gamma
               rays, with NaI(Tl). The curve of cross-section, sigma, versus
               proton energy, E_p, for the first reaction possesses a maximum at
               $E_p=3$ Mev. For the second reaction the cross-section increases
               monotonically in the entire energy interval. Also investigated
               were the angular distributions of neutrons and gamma rays. The
               characteristics of the excited state of helium-4 are discussed.
               The authors thank the associates of the Cyclotron Laboratory, and
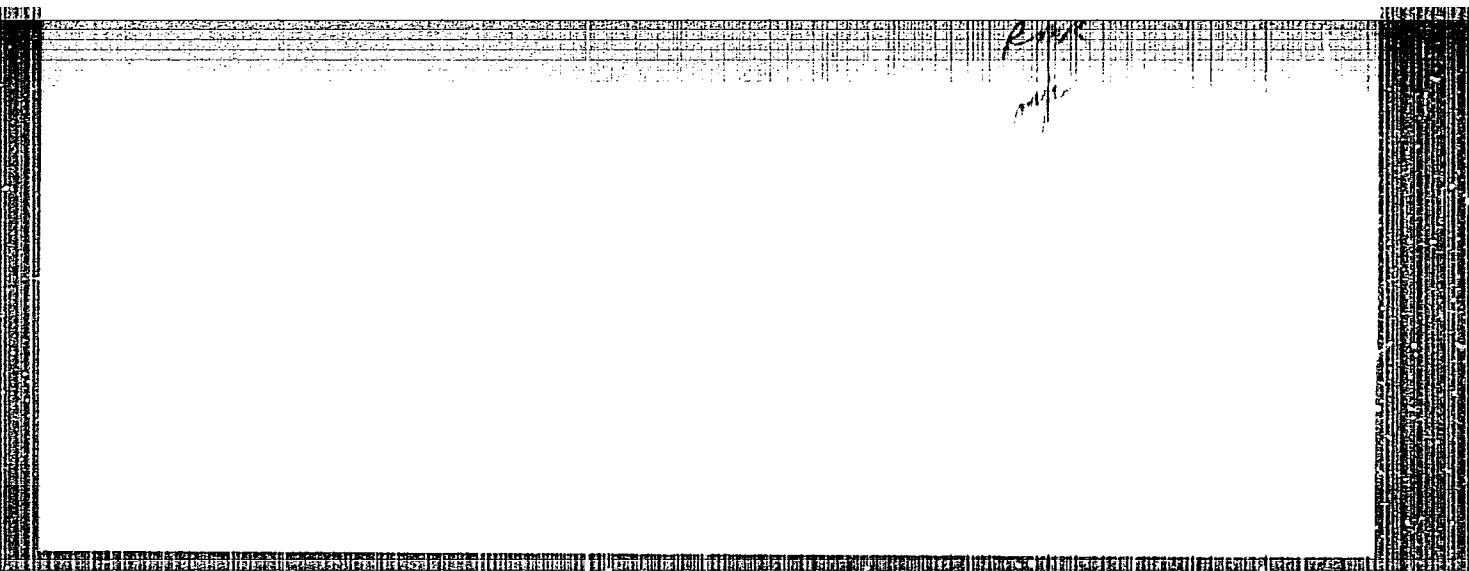
Kalinin, S. P.

USSR/Nuclear Physics - Structure and Properties of Nuclei   C-4

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33990

    Author : Bogdanov, G F., Vlasov, N. A., Kalinin, S. P., Rybakov, B. V.
              Sidorov, V. A.

 Institution: None

     Title: Spectra of Neutrons Bombarded with T and D Deuterons with
            Energies of 14 Mev

    Original
  Periodical: Zh. eksperim. i teor. fiziki, 1956, 30, No 1, 185-187

            To check the existing experimental data on the existence of an
            excited state of approximately 2 Mev in the He^4 nucleus, spectra
            were studied of neutrons produced by the $T(d,n)$ He^4 and $D(d,n)$
            He^3 reactions, with the neutrons escaping at an angle of $0°$
            relative to the beam of the deuterons. The beam of the 14 Mev
            deuterons was focused with the aid of a magnetic prism at a dis-
            ·tance of 12 m from the cyclotron, where a thin tritium-zirconium
            or a gas deuterium target was placed. The energy of the neutrons

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USSR/Nuclear Physics - Structure and Properties of Nuclei

C-4

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33990

was measured from the time it took them to cover the distance from the target to the counter, the latter being a photomultiplier with a solid solution of terphenyl in polystyrol acting as a phosphor. The neutron source was operating under pulse conditions based on the natural modulation of the cyclotron beam. The pulses from the counter went to a germanium-diode coincidence circuit. Pulses, synchronized with the accelerating voltage of the cyclotron were applied to the second leg of the coincidence circuit. The time resolution of this spectrometer (width of gamma line at half the altitude) amounted to 7 mμ seconds.

The spectrum of the neutrons from the $T(d,n)$ He^4 and $D(d,n)He^3$ reactions displayed not only the maxima corresponding to the formation of the He^4 and He^3 nuclei in their fundamental states but also wide groups of slower neutrons with an average of energy of 8 Mev. For the $T + d$ reaction this energy corresponds to an excitation energy of finite nucleus of approximately 22 Mev. However, the similarity of the spectra in

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USSR/Nuclear Physics - Structure and Properties of Nuclei   C-4

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33990

the case of both reactions is indication in favor of the assump-
tion that the second groups of neutrons are formed faster by a
break-up of the deuteron than by the usual reaction with a forma-
tion of a finite nucleus He^4 and He^3 in excited state.
Notice is taken of the large value of the cross section for the
formation of the neutrons of the second groups. This amounts
to 300 millibarns/steradian for the case of the $T + d$ reaction,
and 100 millibarns/steradian for the case of the $D + d$ reaction.

Card 3/3

KALININ, S. P.

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3252

Author   : Bogdanov, G.F., Vlasov, N.A., Kalinin, S.P., Rybakov, B.V., Sidorov, V.A.
Title   : Spectra of Neutrons Produced by Bombarding Light Nuclei with 14 Mev
           Deuterons.

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 5, 981-983

Abstract : Using the time of flight method, a measurement was made of the spectra
           of neutrons produced by bombarding thin targets of H, He^3, He^4 (E_d 13.0
           Mev) and T (in zirconium), Li, Be, B, C, Cu (E_d 14.4 Mev) produced by
           bombardment with a beam of deuterons from a cyclotron. The measurements
           were made at an angle of $0°$ to the deuteron beam. The reactions $T + d$
           and $He^3 + d$ differ both in the shape of the neutron spectrum, as well
           as in the value of the cross section (in the former case the cross
           section is almost three times greater). This confirms the existence of
           an excited state with excitation energy of 22 Mev in the He^4 nucleus and
           indicates the absence of a similar state in the Li^4 nucleus. Consequen-
           tly, the isotopic spin of the excited state of He^4 is zero. It is noted
           that the neutron spectrum of the reaction $He^3 + d$ does not display the
           hypothetical level of the Li^5 nucleus with an approximate excitation

Card   : 1/2

KALININ, S. P., VLASOV, N. A., BOGDANOV, G. F., NISAKOV, B. V., and CHIKOV, V. L.

"The Spectra of the Fast Neutrons from (P,n) reactions are Measured on the 1.5 Meter Cyclotron by the Time-of-Flight Method," a paper presented at the International Conference on the Neutron Interactions with the Nucleus, New York City, 9-13, Sep 57.

Abstract Available in C-3,800,344

KLININ, S. F., VLASOV, N. A., BOGDANOV, G. F., LIBAKOV, B. V., and SIDOROV, V. A.

"Time-of-Flight Analysis of the Reaction of 18 Mev Deuterons with Light Nuclei," a paper submitted at the International Conference on the Neutron Interactions with the Nucleus, New York City, 9-13 Sep 57.

Abstract Available in C-3,000,344

KALININ, A.P., ARTEMOV, K.P., BOGDANOV, G.F., RYBAKOV, B.V., SIDOROV, V.A.,
    VLASOV, V.A.

"Spectra of Neutrons and Protons from ($He^4 + d$) Reaction and Energy
Levels of Li^5 and He^5."

paper submitted at the All-Union Conf. on Nuclear Reactions in Medium and
Low Energy Physics, Moscow, 19-27 November 1957.

paper submitted at the All-union Conf. on Nuclear Reactions in Medium and Low
Energy Physics, Moscow, 19-27 November 1957.

KALININ, S P

AUTHOR: NEMENOV,L.M., KALININ,S.P., KONDRAŠOV,L.F., MIRONOV,E.S.,   PA - 2194
            NAUMOV,A.A., PNASJUK,V.S., FEDOROV,N.D., CHALDIN, N.N.,
            ČUBAKOV,A.A.
TITLE: A one-and-a-half meter cyclotron with constant frequency.

ABSTRACT: The building of this cyclotron was projected in 1945 and was com-
            pleted in 1946. The first deuteron ray from this cyclotron was ob-
            tained in 1947. The accelerator was completely surrounded by a
            water jacket of 1 m thickness and a great number of operations
            which are dangerous because of radiation were remote-controlled.
            This cyclotron was used for the study of nuclear processes occuring
            in the cyclotron itself. Apart from deuterons, α-particles, and
            ions, also protons and multiply charged nitrogen ions were acceler-
            ated by means of this cyclotron.

            The electromagnet: The magnetic chain consists of a closed frame of
            square cross-section with pole shoes. The operation diameter of the
            pole is 1500 mm. The electromagnet is air-cooled. Total weight is
            330 t. By means of this electromagnet field strengths of up to
            18.000 Örsted can be produced in the intermediate space between the
            pole shoes.

            The resonance system and the high frequency generator: The resonance

Card 1/3

PA - 2194

A one-and-a-half meter cyclotron with constant frequency.

acceleration chamber is warranted by three oil vapor pumps.
In conclusion the deflection system and the focussing of a bundle
on to a distant target is discussed.

By means of this cyclotron protons were accelerated up to 12,2 MeV,
deuterons up to 19,6, α-particles and nitrogen ions up to 39,2
and 120 MeV respectively.

ASSOCIATION: Not given.
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress.

Card 3/3

The Excitation Curves of the Reactions   PA - 2262

$Mg^{24}(d,\alpha)Na^{22}$, $Fe^{54}(d,\alpha)Mn^{52}$, $Fe^{54}(d,n)Co^{55}$, and $Zn^{66}(d,2n)Ga^{66}$.

and Ga^{66} at the last two reactions were given.   (5 illustrations)

ASSOCIATION: Not given.
PRESENTED BY:
SUBMITTED: 13.10.1956.
AVAILABLE: Library of Congress.
Card 3/3

The Excitation Curves of the Reactions $Li^7(p,n)Be^7$,   PA - 2263
$B^{10}(p,\alpha)Be^7$, $B^{11}(p,n)C^{11}$ and the Energy Levels of the Nuclei of
Be^8, C^{11}, and C^{12}.

curves of the reactions $Li^7(p,n)Be^7$ and $B^{10}(p,\alpha)Be^7$ were obtained
from the γ - activity of the Be^7 and the excitation curves of the
reaction $B^{11}(p,n)C^{11}$ from the annihilation radiation of the C^{11}.
Also the measuring of these activities is discussed. The thus ob-
tained excitation curves are shown in diagrams.

The excitation curve of the reaction $Li^7(p,n)Be^7$ shows maxima at
the proton energies of 4,9, 6,0, and 7,6 MeV, which correspond to
the known levels of the nucleus Be^8 with the excitation energies
21,5, 22,5, and 23,85 MeV. Besides, curvatures are noticed in the
course of the excitation curve at the proton energies 8,8 and
9,5 MeV as well as in the domain of 3,5 MeV. These curvatures are
probably known by hitherto not known levels of the excitation
energy in the Be^8-nucleus.

The excitation curve of the reaction $B^{10}(p,\alpha)Be^7$ has distinct
maxima at the proton energies of 4,0 and 5,6 MeV. The first of these
resonances corresponds to the known level of 12,3 MeV of the C^{11}-
nucleus. The second resonance can be explained by the existence

Card 2/3

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.. THOR   BOGDANOV, G.F.,VLASOV,N.A.,KALININ,S.P.,RYBAKOV,B.V.,   89-9-2/32
             SIDOROV, V.A.
TITLE   The Li(p,n)Be reaction and the Fundamental Structure of the Be^6
             Nucleus.
             (Reaktsiya(p,n) na litii i osnovnoye sostoyaniye yadra Be^6)
PERIODICAL   Atomnayı Energiya, 1957, Vol 3, Nr 9, pp 204 - 210 (U.S.S.R.)

ABSTRACT   By means of the time of flight method the neutron spectrum emitted.
             by the reactions Li^6+p and Li^7+p = 9 MeV is measured. Further, the
             redistribution of neutrons and the reaction cross sections were mea-
             sured. The results are
             1) $Li^6(p,n)Be^6$
             a) Q_0 = -5,2 ± 0,2 MeV
             b) the natural breadth of the ground state Γ < 0,3 MeV
             c) angular distribution of neutrons: $\sigma(\theta)$=0,19+0,23 cos(θ)+
                +0,70 $cos^2(\theta)$ mb/steradian
             d) mass defect of Be^6 = 20,3 ± 0,2 MeV
             e) Reaction cross section for the ground state at Ep=9 MeV σ=5 ± 1 mb
             2) $Li^7(p,n)$ Be^7
             a) The neutrons corresponding to the ground state, the level with
                0,43 MeV and 4,65 MeV were found,
             b) The angular distribution for the neutrons of the ground state and
                the 1st level is $\sigma(\theta)$ = 6,8+2,4 $cos^2(\theta)$ mb/steradian
Card 1/2   c) The total reaction cross section (forming of ground state and 1st

KALININ, S. P. and PANKRATOV, V. M.

"Fast Fission Cross-Sections."

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic
Energy, Geneva, 1 - 12 13 Sept 58.

KALININ, S. P.

33085
S/638/61/001/000/007/056
B102/B138

2*6600

AUTHORS: Artemov, K. P., Kalinin, S. P., Samoylov, L. N.

TITLE: Proton scattering from He^3 at 9.6, 8.6, 7.9, 6.8, and 5.5 Mev

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu
             atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent,
             1961, 73-75

TEXT: The angular distribution curves were measured for protons of 9.6,
8.6, 7.9, 6.8, and 5.5 Mev (energies in the laboratory system) scattered
in He^3 gas targets. The 9.6-Mev protons came directly from the cyclotron,
the other energies were obtained by appropriate slowing-down processes.
The target vessel had a window closed by a 6-mg/cm^2 iron foil, and a
pressure of about 800 mm Hg inside. The background ranged from 20%
(9.6 Mev) to 70% (5.5 Mev). The proton flux at the target was measured by
a beam catcher with integrator. The scattered protons were recorded by
photographic plates 125 mm from the target center arranged at angles of
20-155°. The distribution curves were compared with theoretical curves
obtained from the optical model. A qualitative agreement was found in
Card 1/2

Proton scattering from He^3 ...

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S/638/61/001/000/007/056
B102/B138

essence. [Abstracter's note: A figure not shown is mentioned in the text; it should give the results and show a comparison with the theoretical distribution curves.] There are 8 references: 2 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: Sweetman D. Phil. Mag. ser. 7, 46, 358, 1955; Lovberg R., Phys. Rev. 103, 1393, 1956; Bransden B., Robertson H., Proc. Phys. Soc., 72, 770, 1958; Famularo K. et al. Phys. Rev. 93, 928, 1954.

ASSOCIATION: Institut atomnoy energii AN SSSR (Institute of Atomic Energy AS USSR)

Card 2/2

33087
S/638/61/001/000/009/056
B102/B138

2 4,6300

AUTHORS: Vlasov, N. A., Kalinin, S. P., Ogloblin, A. A., Chuyev, V. I.

TITLE: (d,t) reaction on C^{12}, F^{19}, and Al^{27} nuclei

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu
               atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent,
               1961, 79-84

TEXT: The present investigations continue previous studies (ZhETF 1959,
27, 54) which had shown that in (d,t) reactions on $Li^{6,7}$ and Be^{9} the
excitation probability decreases rapidly with increasing level energy of
the terminal nucleus. The excitation spectrum is here much more compli-
cated than where only hole levels are excited, as neutrons may not only be
extracted from outer (2s and 1d), but also from full 1p, shells. The
triton spectra were obtained from the β activity of the resulting tritium
collected in Al foils. It was eliminated from the plates by heating and
conducted into a helium counter. $F^{19}(d,t)F^{18}$ was investigated with a
0.4 mg/cm^{2} thick MgF_{2} target and an 8.2 mg/cm^{2} thick Teflon (CF_{2}) target

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(d,t) reaction on C^{12}, F^{19}, ...

at E_d = 20 Mev, Al^{27}(d,t)Al^{26} at E_d = 19 Mev and with a 2.15 mg/cm^2 thick Al target. The Teflon target was also used to study the C^{12}(d,t)C^{11} reaction. The t-angular distributions were compared with results obtained from the Butler theory. The strongest triton group consists of two components (l=0 and l=1). The scheme produced for F^{18} level agrees with that of other authors. Fig. 6 shows the Al^{26} level scheme obtained by other authors together with transitions observed here. Tabulated results show that the (d,t) reactions on F^{19} and Al^{27}, like those on Li^7 and Be^9, have a probability of excitation of the final nuclear levels which decreases rapidly with increasing level energy. The reduced widths of the 3-4 Mev levels are 3-10 times smaller than those of the ground state. Those of 5-7 Mev have 20-30 times less probability of excitation than the ground level. The 3.3-Mev F^{18} level (l=1) has negative parity and comparatively high probability of excitation (width: 0.73%) since a neutron is torn out of the p shell. In Al^{27}, extraction of a neutron with l = 2 is much more probable than one with l = 0, i.e., the inner neutrons of Al^{27} are mainly in the d-state with a small admixture of s-state. r_o increases with level energy from 4.5·10^{-13} cm (C^{12} ground state) to

Card 2/4 3

(d,t) reaction on C^{12}, F^{19}, ...

33037
S/638/61/001/000/009/056
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$9 \cdot 10^{-13}$ cm (F^{18}, 5.9 Mev). The authors thank D. P. Grechukhin and V. G. Neudachin for a discussion, and the cyclotron team for the irradiations. There are 7 figures, 2 tables, and 15 references: 1 Soviet and 14 non-Soviet. The four most recent references to English-language publications read as follows: Kuchner J. A., Almqvist E., Bromley D. A. Phys. Rev. Lett., 1, 260, 1958. Kuchner J. A., Almqvist E., Bromley D. A. Bull. Am. Phys. Soc., II, 3, 27, 1958. Almqvist E., Bromley D. A., Kuchner J. A. Bull. Am. Phys. Soc., II, 3, 27, 1958. Bennet E. F. Bull. Am. Phys. Soc., II, 3, 26, 1958.

ASSOCIATION: Institut atomnoy energii AN SSSR (Institute of Atomic Energy AS USSR)

Card 3/4

X

21(7)   SOV/56-36-2-53/63

'AUTHORS: Bogdanov, G. F.,   Vlasov, N. A.,   Kalinin, S. P.,   Rybakov, B.V.,
            Samoylov, L. N.,   Sidorov, V. A.

TITLE: The Reaction $T(p,n)He^3$ at **Proton Energies**   of 7 to 12 Mev

            (Reaktsiya $T(p,n)He^3$ pri energii protonov 7 - 12 MeV)

ABSTRACT: The present paper deals with the measurement of the cross
            sections and of the angular distributions of the reaction
            $T(p,n)$ in the interval 7 - 12 Mev of proton energies. More-
            over, the authors tried to measure the polarization of the
            neutrons in this reaction. A solid tritium-zirconium target
            (thickness 20 μ) was bombarded by protons accelerated to
            12 Mev in a cyclotron. The neutron flux was measured by a
            telescope consisting of 4 proportional   counters and also
            by a spectrometer. The cross sections are measured with a
            precision of 10%. The first diagram shows the results of the
            measurement of the cross section under the angle 0^0 and
            previously published results of the measurements in the energy
            interval of 1 - 7 Mev. The cross section is approximately con-
Card 1/3   stant in the investigated energy interval, and it increases

The Reaction $T(p,n)He^3$ at **Proton Energies**

SOV/56-56-2-53/63
of 7 to 12 Mev

slightly at energies of 11 - 12 Mev. The second diagram gives
the angular distributions of the neutrons at the energies
8.8; 8.9; and 12 Mev. The high forward-backward anisotropy
indicates an intense interference of the states of different
parity. The curves given in the figures correspond to expres-
sions of the type $\sigma(\theta) = A + B\cos\theta + C\cos^2\theta + D\cos^3\theta + E\cos^4\theta$
in the c.m.s.. The coefficients of these expressions were cal-
culated by the method of least squares and they are given in
the following table:

E_p (Mev)	A	B	C	D	E	σ_t (mb)
6.8	11.1	11.3	24.4	-51.4	25.3	305
8.9	13.3	1.0	1.3	-28.4	27.3	241
12.0	13.0	7.5	-23.7	-24.9	44.6	176

The third diagram shows the energy dependence of the reaction.
The investigation of the polarization of the neutrons produced
in the reaction $T(p,n)He^3$ is important for the determination
of the characteristics of the excited states of an α-particle.
The inverse reaction $He^3(n,p)T$ was investigated according to
a method suggested by H. H. Barshall. According to this method,

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The Reaction $T(p,n)He^3$ at **Proton Energies** of 7 to 12 Mev   SOV/56-36-2-53/63

the absolute values of the polarization can be measured without an analyzer of known polarization properties. According to the measurements discussed in the present paper, for $E_p \lesssim 10$ Mev and for the angles satisfying Barshall's condition asymmetry is not higher than 5%. A noticeable asymmetry was observed in the case $\Theta_1 = \Theta_2 = 40^\circ$, and this asymmetry indicates a polarization of the neutrons. Θ_1 denotes the angle under which the chamber filled with He^3 (10 atmospheres) was placed in the neutron beam. By means of a telescope of proportional counters, the right-left asymmetry of the flying off of protons from the reaction $He^3(n,p)T$ under the angle Θ_2 was measured. There are 3 figures, 1 table, and 9 references, 6 of which are Soviet.

SUBMITTED: November 17, 1958

Card 3/3

21(7)

AUTHORS: Artemov, K. P., Kalinin, S. P.,   SOV/56-37-3-12/62
                Samoylov, L. N.

TITLE: The Scattering of Protons on He^3 at Energies of 5 - 10 Mev

ABSTRACT: With a view of explaining the states and the structure of
                the Li^4-nucleus various authors already investigated the
                proton scattering on He^3-nuclei (Refs 1-5). The present paper
                gives a report on investigations at the proton energies
                9.6, 8.6, 7.9, 6.8, and 5.5 Mev. The 9.6 Mev protons were
                obtained direct from the cyclotron, the protons of lower
                energies were obtained by slowing down. The gas target (He^3
                with 800 Hg) had a window that was closed by means of an
                iron foil (6 mg/cm^2). The proton flux impinging upon the
                target was measured by means of a Faraday cylinder, the scat-
                tered protons were recorded by means of photographic plates.
                The measured differential proton cross sections on He^3 are
                shown in diagrams for the five E_p-values (E_p is given in the
Card 1/2

The Scattering of Protons on He^3 at Energies   SOV/56-37-3-12/62
of 5 - 10 Mev

laboratory system)(Figs 1-5), viz. in dependence on the
scattering angle θ . All curves have low minima between
90 and 120°. The experimentally obtained results are compared
with the theoretical results obtained by other authors under
different assumptions with respect to the nature of the nuclear
forces (The symmetric and the Serber variant). Above all,
results obtained by Innas et al. (Ref 4) are mentioned, which
had been obtained by means of the optical model and in con-
sideration of the spin-orbit coupling. In figure 2 (curve C)
the $\sigma(\theta)$-results of this paper for V_o=36 Mev are plotted; qua-
litative agreement is found. The curves A in all diagrams have
been calculated according to Serber's type, and curve B for the
assumption of symmetry. The former show better agreement with
the experiment. From the energy dependence of the cross sections
it is not possible to draw conclusions as to the discrete levels
of the Li^4-nucleus; it may, however, be said that this nucleus pos-
sesses no state with a life-time essentially exceeding the col-
lision time. There are 5 figures and 8 references, 2 of which are Soviet.

SUBMITTED: April 17, 1959
Card 2/2

VLASOV, N.A.; KALININ, S.P.; OGLOBLIN, A.A.; CHUYEV, V.I.

(d, t)-Reaction on medium and heavy nuclei. Zhur. eksp. i teor.
fiz. 38 no.1:280-282 Jan '60.   (MIRA 14:9)
    (Nuclear reactions) (Tritons (Tritium ions))

85681

Neutron Spectra of the d+p Reaction   S/056/60/038/006/023/049/XX
                                                   B006/B070

2.5 mμsec; the channel width of the time analyzer was about 0.8 mμsec. The
recording device had 256 channels with a capacity of 2^{16} pulses per
channel. For illustration, the distribution of the neutrons from
H(d,n)2p is given (Fig. 1) as a function of their time of flight at an
angle of 0° with the deuteron beam. E_d being 18.6 Mev. The target - counter
distance was 2.8 mm, the counter threshold 3.2 Mev, and the time analyzer
channel width 0.836 mμsec. Figs. 2 and 3 show the energy distribution of
neutrons in the laboratory system of the two reactions studied. The path
lengths in the first case were 7m (c) and 2.8m (o), and in the second
case, 5.15 m (o) and 1.58 m (o). The neutron production cross sections at
0° for the reaction H(d,n)2p was (150 ± 15)mb/steradian, and for the reac-
tion D(p,n)2p (47 ± 5) mb/steradian. In the center-of-mass system of the
three nucleons, the cross sections were (20 ± 2)mb/steradian and
(11 ± 1)mb/steradian, respectively, at 0° and 180° with the deuteron beam.
Figs. 4 and 5 show the neutron spectra of the reactions $d+p\rightarrow2p+n$ at
angles of 0 and 180°, respectively, with the deuteron beam, and for
E_o=4.0 Mev and E_o=3.5 Mev, respectively. In addition to a peak on the
edge, the spectrum at 180° shows a peak also at a neutron energy of

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85681

Neutron Spectra of the d+p Reaction

S/056/60/038/006/023/049/XX
B006/B070

0.6 Mev whose position corresponds to a zero relative velocity of the neutron, and one of the protons in the final state. The results show that nucleon pairs of low kinetic energy of relative velocity have a large probability of formation in the reaction d+p→2p+n. Finally, the explanation of the spectra by pair interaction between nucleons in the final state is discussed and compared with the results of other authors. A. B. Migdal, V. V. Komarov, and A. M. Popova are mentioned. There are 5 figures and 10 references: 6 Soviet and 4 US.

SUBMITTED: February 15, 1960

Card 3/3

86925

S/056/60/039/005/042/051
B006/B077

24.6600

AUTHORS: Vlasov, N. A., Kalinin, S. P., Ogloblin, A. A.,
                 Chuyev, V. I.

TITLE: The (α, t) Reaction With Li^7, Be^9, and Na^{23}

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
                 Vol. 39, No. 5(11), pp. 1468 - 1470

TEXT: The authors report on experimental investigations of the (α, t) re-
action with Li^7, Be^9, and Na^{23} with an α energy of 40 Mev in a wide exci-
tation energy range. The final nuclei Be^8, B^{10} and Mg^{24} were also obtain-
ed through (d,n) stripping reactions and (d,t) adhesion reactions. The
triton spectra, like in investigations of the (d,t) reaction, were de-
termined from the tritium activity which had accumulated on the foils
arranged around the target. Foils of the investigated element of 4 mg/cm^2
thickness served as targets. The results of these experiments are only
illustrated in diagrams. Fig. 1 shows the angular triton distribution;

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86925

The (α, t) Reaction With Li^7, Be^9, and Na^{23} S/056/60/039/005/042/051
                                                                    B006/B077

E^* denotes the level of the final nucleus; the curve shows the calculated square of the spheric Bessel function for given 1- and R_o-values. Fig. 2 shows the triton spectra recorded under small angles. In all three cases lines can be observed that correspond to several states of the final nucleus. The angular distribution of most groups can be well described by the squared spherical Bessel function $\left[j_{1+1/2}(qR_o) \right]^2$. Fig. 3 represents a comparison of the level excitation probabilities of the Be^8, B^{10}, and Mg^{24} nuclei in (d,n), (α,t), and (d,t) reactions. The maximum differential cross sections for the (α,t) and the $Na^{23}(d,n)Mg^{24}$ reactions and the reduced widths for the (d,t) and the $Be^9(d,n)B^{10}$ reactions are used for ordinates. There are 3 figures and 10 references: 3 Soviet, 2 British, and 5 US.

SUBMITTED: July 23, 1960

Card 2/2

1

88435

S/056/60/039/006/024/063
B006/B056

26.2224

AUTHORS: Vlasov, N. A., Kalinin, S. P., Ogloblin, A. A., Chuyev, V. I.

TITLE: The (d,t) Reaction on Zirconium Isotopes

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
              Vol. 39, No. 6(12), pp. 1615 - 1617

TEXT: In order to study the effec' produced by external neutrons, the
authors investigated the (d,t) reactions on $Zr^{91,92,94}$, which have
1, 2, and 4 neutrons above the closed shell with N = 50. The triton
spectra were, like in earlier papers (Refs.1-3) determined according to
the β-activity of tritium. The tritons emitted from a target of 3-5 mg/cm^2
were caught in piles of aluminum foils arranged under different angles at
a distance of 15 cm from the target. The deuterons were accelerated in the
cyclotron to 20 Mev. The targets were made from zirconium oxide, enriched
in Zr^{91} to 79.5%, in Zr^{92} to 88.6%, and in Zr^{94} to 90.0%, respectively.
All three isotopes displayed the existence of two state groups - the first

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The (d,t) Reaction on Zirconium Isotopes   S/056/60/039/006/024/063
B006/B056

corresponds to the ground state, the second to an excited state. The
angular distributions of these groups are shown in Fig.2 (upper row:
ground state). To the ground-state group there corresponds an $l = 2$; i.e.
to a $d_{5/2}$ state, the excited group $l = 1$ and 4 (width ~ 2 Mev). One of the
groups corresponds to an ejection of neutrons from a closed shell with
neutron binding energies, which are approximately equal and are about
11 - 13 Mev for all zirconium isotopes. In the $Zr^{90}(d,t)$ reaction only
this group is to be observed; its intensity decreases slowly from
Zr^{90} to Zr^{94}. The other group corresponds to an ejection of an external
neutron. The intensity of this group is almost proportional to the
number of super-magic neutrons. There are 3 figures and 4 references:
3 Soviet and 1 US.

SUBMITTED: July 23, 1960

Card 2/2

26.2240

S/056/60/039/006/025/063
B006/B056

AUTHORS: Vlasov, N. A., Kalinin, S. P., Ogloblin, A. A., Chuyev, V.I.

TITLE: The Reaction $B^{11}(d,t)B^{10}$

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
             Vol. 39, No. 6(12), pp. 1618 - 1620

TEXT: The $B^{11}(d,t)B^{10}$ reaction was investigated at deuteron energies of
20 Mev; as was the case also in earlier papers (Refs.1-4), the triton
spectra according to the β-activity of tritium were accumulated in foil
piles around the target (3 mg/cm^2 boron enriched in B^{11} to 81%, upon a
0.4 mg/cm^2 thick Mg backing). Fig.1 shows the triton spectrum recorded at
11°, B^{10} being produced in the ground and (known) excited states of 0.72,
1.74, 2.15, 3.58, 5.1, and 6.2 Mev. Numerical results of the measurements
are tabulated. Also the distribution of the reduced widths θ^2 of the
various levels of (d,t) and (d,n) reactions were investigated. The in-
vestigations indicated that excitation of the lower levels of B^{10} occurs

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The Reaction $B^{11}(d,t)B^{10}$

88436

S/056/60/039/006/025/063
B006/B056

as a result of the ejection of a neutron with l = 1; the probability for
the production of B^{10} in the ground state is several times higher than that
for its production in excited states. There are 2 figures, 1 table, and
6 references: 4 Soviet, 1 US, and 1 Dutch.

SUBMITTED: July 23, 1959

Text to the table: 1) B^{10} level, Mev; 2) σ_{max} in the o.m.s.,
mb/steradian; 3) ground state; 4) isotropic.

Уровень B¹⁰, Mev 1	B¹¹ (d, t) B¹⁰				B¹¹ (d, t) B¹⁰	
3	l	r_s, ф	σ_{max} в с. ц. и. 2 мби/стерад	Θ¹, %	l	Θ¹
Основное состо- яние	1	6,0	6,4 (15°)	2,47	1	1,7
0,72	1	6,0	1,75(15°)	0,71	1	3,5
1,74	1	7,0	0,05(15°)	0,39	1	2,5
2,15	1	6,0	1,55(15°)	0,72	1	
3,58	(1)		0,45(15°)	~0,1	1	0,7
4,77			<0,2 (15°)	<0,1(l=1)	(1)	0,3
5,11	} (1)		0,9 (10—15°)	~0,3	(0)	1,3
5,16					(1)	(0,5)
5,93						
6,2	изотропно 4		0,6		(1)	0,5

Card 2/3

27522
S/089/61/011/004/003/008
B102/B138

21.3000

AUTHORS: Vlasov, N. A., Kalinin, S. P.

TITLE: Physical research at the cyclotron laboratory of the
             Institute of Atomic Energy imeni I. V. Kurchatov

PERIODICAL: Atomnaya energiya, v. 11, no. 4, 1961, 345 - 355

TEXT: The article gives the most important data concerning the cyclotron
of the Institut atomnoy energii im. I. V. Kurchatova (Institute of Atomic
Energy imeni I. V. Kurchatov), and some experiments are described. A
complete description of this cyclotron may be found in Ref. 1
(L. M. Nemenov et al., Atomnaya energiya, II, No. 1, 36 (1957)). It was
constructed in 1947; in the following years, it was improved by focusing
the beam onto a target at 12 m distance. In all operating conditions
(parameters are given in a table), the currents reaching a target area of
1 cm^2 amount to some ten microamperes. The electromagnet of the cyclotron
weighs 330 tons and has a pole-piece 1.5 m in diameter. With some im-
provements such as phase and frequency stabilization, the cyclotron can
now also be used as a pulsed fast-neutron source for a time-of-flight

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27522
S/089/61/011/004/003/C06
B102/B138

spectrometer. By adjusting the diaphragm system it is now possible to produce intense and highly monochromatic (energy spread $\leq 0.2\%$) ion beams. One of the main fields of research in the cyclotron laboratory is that of fast-neutron spectrometry. In (d,n) and (α,n) reactions at $E_d = 20$ Mev and $E_\alpha = 40$ Mev respectively, neutrons can be obtained with energies up to 40 Mev. The first experiments in this field were in the production of monochromatic neutrons of up to 7 Mev by the reaction $T(p,n)He^3$. Time-of-flight spectrometry experiments were started in 1954. The resolving time of the recording apparatus must be of the same order as the duration of a neutron pulse, i. e., < 2 mμsec. In normal conditions the width of a neutron pulse was not more than 10 mμsec. Investigation of the relation-ship between pulse shape and cyclotron parameters showed that it was pos-sible to produce doublet pulses without any effect of the pulse width upon resolution. The characteristic resolving time of the spectrometer was 2.5 mμsec. The first single-channel modification of the spectrometer was developed in 1956. Now, a multi-channel spectrometer is in operation, which can be used directly as a high-speed slow-motion camera. It is described in detail by B. V. Rybakov and V. A. Sidorov (cf. Atomnaya

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Physical research at the...

energiya, $\underline{5}$, no. 2, 135 (1958)). As a final recorder, a 256-channel
analyzer of the ЭЛА-2 (ELA-2) type is used. The spectra of fast neutrons
from many nuclear reactions, especially of such which may be used for
production of monochromatic neutrons, have been investigated. The upper
energy limit in these experiments was 15 Mev. The authors discuss special
experiments carried out with the use of fast-neutron spectrometry. Some
(p,n) and (d,n) reactions in D, T, and He are described in detail. In
(d,n) reactions, the 0^{0} neutron spectrum had a peak at $E_n \simeq E_d/2$. A

detailed investigation of the continuous neutron spectra showed that the
shape of spectra is, in part determined by final-state pair interaction of
the particles produced. In D(d,n) and $He^{3}(d,n)$ reactions, no final-state
pair interaction was found. Here the shape of spectra is determined by
the energy distribution of three particles. Other fast-neutron experiments
have been carried out to study the statistical properties of the nucleus.
A third group of such experiments covered the measurement of fission cross
sections. A special device has been constructed to study nuclear reac-
tions in which tritium is produced. (For details see N. A. Vlasov,
A. A. Ogloblin. Yadernyye reaktsii pri malykh i srednykh energiyakh -

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27522
S/089/61/011/004/003/008
B102/B138

Physical research at the...

Nuclear reactions at low and medium energies, M. Izd-vo AN SSSR, 1958).
Some results of (d,t) reactions in Li^7, O^{18}, F^{19}, and $Zr^{91,92,94}$ are
discussed. There are 14 figures and 23 references: 17 Soviet and 6 non-
Soviet. The three most recent references to English-language publications
read as follows: B. W. Rybakov, W. A. Sidorov, N. A. Vlasov. Nucl. Phys-
ics, 23, 491 (1961); E. Hamburger, B. Cohen, R. Price. Preprint, 1960;
N. Lassen, V. Sidorov. Nucl. Physics, 19, 579 (1960).

SUBMITTED: May 27, 1961

Card 4/4

24 6600

AUTHORS: Vlasov, N. A., Kalinin, S. P., Ogloblin, A. A.,
             Chuyev, V. I.

TITLE: (d,t) Reactions of O^{16}, O^{18}, Mg^{24}, Mg^{25}, and Mg^{26} nuclei

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya,
             v. 25, no. 1, 1961, 115-120

TEXT: This is the continuation of previous papers (Refs. 1, 2, 3) on the
(d,t) reaction. A study of the latter makes it possible to determine the
degree of conservation of single-particle states in the inner, completely
filled shells of nuclei. If these states are conserved, it is possible to
determine the neutron binding energy in the shells or the neutron transi-
tion energy between them. The nuclei of O^{16}, O^{18}, Mg^{24}, Mg^{25}, and Mg^{26}
have completely filled 1s and 2p shells and different numbers of neutrons
in the outer shell $1d_{5/2}-2s_{1/2}$. Like in Refs. 1-3 and 7, the deuteron
energy was found to be about 20 Mev, and the triton spectrum was determin-
ed from the activity of tritium. MgO^{18} (60% O^{18}), $Mg^{25}O$ (86% Mg^{25}),

Card 1/04

89255

S/048/61/025/001/021/031
B029/B063

24 6600

AUTHORS: Vlasov, N. A., Kalinin, S. P., Ogloblin, A. A.,
Chuyev, V. I.

TITLE: (d,t) Reactions of O^{16}, O^{18}, Mg^{24}, Mg^{25}, and Mg^{26} nuclei

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya,
v. 25, no. 1, 1961, 115-120

TEXT: This is the continuation of previous papers (Refs. 1, 2, 3) on the
(d,t) reaction. A study of the latter makes it possible to determine the
degree of conservation of single-particle states in the inner, completely
filled shells of nuclei. If these states are conserved, it is possible to
determine the neutron binding energy in the shells or the neutron transi-
tion energy between them. The nuclei of O^{16}, O^{18}, Mg^{24}, Mg^{25}, and Mg^{26}
have completely filled 1s and 2p shells and different numbers of neutrons
in the outer shell $1d_{5/2}$-$2s_{1/2}$. Like in Refs. 1-3 and 7, the deuteron
energy was found to be about 20 Mev, and the triton spectrum was determin-
ed from the activity of tritium. $MgO^{18}(60\%\ O^{18})$, $Mg^{25}O\ (86\%\ Mg^{25})$,

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(d,t) Reactions of O^{16}, O^{18}, ...   S/048/61/025/001/021/031
                                                    B029/B063

the d-neutron, while in the case of F^{19}, it is that of the s-neutron.
The 3.06-Mev and 5.3-Mev levels are excited by ejection of a p-neutron.
It is noted that the 3.058-Mev level has a negative parity and a 1/2-spin.
The 3.06-Mev and 5.38-Mev states are of the hole type. In this way, the
authors were able to calculate the values of neutron binding energy in the
O^{18} and F^{19} nuclei for different states. The ground state of Mg^{23}
and a group of states are very likely to be excited in the reaction
$Mg^{24}(d,t)Mg^{23}$ at an energy of about 2.5 Mev. The angular distribution
of the first group (Fig. 3) is in good agreement with $l = 2$. The angular
distribution of the second group may have different components correspond-
ing to $l = 2$, $l = 1$, etc. In the case of Mg^{24}, the s- and d-shells are
probably much less intermixed than in the case of O^{18} and F^{19}. The group
of tritons appearing in the reaction $Mg^{25}(d,t)Mg^{24}$ corresponds to the
formation of Mg^{24} in the ground state and in excited states having energies

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(d,t) Reactions of O^{16}, O^{18}, ...

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of 1.37, 4.12, 4.23 (not resolved), 6.0, and 7.8 Mev. Five groups of tritons have been found in the reaction $Mg^{26}(d,t)Mg^{25}$. These groups correspond to the well-known levels of the Mg^{25} nucleus. The results obtained for the reaction $Mg^{26}(d,t)Mg^{25}$ can be explained by the shell model if the neutron in Mg^{26} is in the d-state, with a small admixture of the s-state. The principal results of the present work are illustrated in Table 3. The authors thank the co-workers of the cyclotron laboratory for irradiations; V. S. Zolotarev and his co-workers for the preparation of enriched Mg^{25} and Mg^{26} isotopes; and V. M. Strutinskiy and A. I. Baz' for a discussion. This is the reproduction of a lecture read at the Tenth All-Union Conference on Nuclear Spectroscopy, Moscow, January 19-27, 1960. There are 6 figures, 3 tables, and 11 references: 4 Soviet-bloc and 7 non-Soviet-bloc.

ASSOCIATION: Institut atomnoy energii im. I. V. Kurchatova
               (Institute of Atomic Energy imeni I. V. Kurchatov)

Card 4/4

88564

S/020/61/136/001/009/037
B019/B056

24.6600 (1138, 1160, 1158)

AUTHORS: Brill', O. D., Vlasov, N. A., Kalinin, S. P., and
             Sokolov, L. S.

TITLE: The (n,2n)-Reaction Cross Section for C^{12}, N^{14}, O^{16} and F^{19}
             in the Energy Interval of From 10 - 37 Mev

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 1, pp. 55-57

TEXT: In the tests described here, the reactions $D(d,n)He^3$ and $T(d,n)He^4$
were used for the neutron production; they were induced by means of 20 Mev
deuterons. The experiments were made on the cyclotron of the Institut
atomnov energii AN SSSR (Institute of Atomic Energy, AS USSR). The neutron
energy was changed into platinum foils by slowing-down. Solid T+Zr-
targets and gaseous deuterium targets were used. In bombarding the
deuterium and tritium targets with fast deuterons, also neutrons with a
continuous spectrum were formed besides the monochromatic neutron group,
due to (d,pn) and (d,2n) reactions. The intensity of the continuous
spectrum exceeds that of the monochromatic spectrum somewhat, but there
exists an upper energy limit, which is about $E_n \cong E_d$ - 4 Mev. For the

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The (n,2n)-Reaction Cross Section for C^{12},
N^{14}, O^{16} and F^{19} in the Energy Interval of
From 10 - 37 Mev

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S/020/61/136/001/009/037
B019/B056

recording of the relative (n,2n) reaction yield with various neutron
energies, special carbon, NH_4NO_3 and CF_2 specimens were produced. They
were irradiated with neutrons at an angle of 0° under standard conditions;
the β-particles were measured by means of a Geiger counter. The decay
curves of the specimens were determined. The background caused by the
target backing in the case of O^{15} amounted to 30%, with N^{13} to 80%, and in
the case of F^{18} to 88%. The absolute cross section of the (n,2n) reaction
was determined for carbon at E_n = 34 Mev, and for fluorine at E_n = 25 Mev

and 14 Mev. The absolute cross section for nitrogen and oxygen was measured
by comparing the annihilation γ -activity of NH_4NO_3 and water with the

γ -activity of a carbon specimen by means of a scintillation counter. The
results are graphically represented in Figs. 1-4. B.V. Rybakov and
L. S. Sokolov are mentioned. There are 4 figures and 14 references: 4
Soviet, 1 French, 1 Canadian, and 1 US.

PRESENTED: July 8, 1960, by A. P. Aleksandrov, Academician

Card 2/4

VLASOV, N.A.; KALININ, S.P.; RYBAKOV, B.V.; SIDOROV, V.A.

[Neutron spectrum of the d + p reaction] Spektry neitronov
reaktsii d + p. Moskva, In-t atomnoi energii AN SSSR, 1960.
15 p.   (MIRA 17:3)

L 27307-65   EWT(m)/EPA(w)-2/EWA(m)-2   Pab-10/Pt-10   IJP(c)
ACCESSION NR: AP5002140   S/0120/64/000/006/0028/0029

AUTHOR: Antonov, A. V.; Vasil'yev, P. I.; Venikov, N. I.; Kalinin, S. P.;
Sokolov, N. I.; Khaldin, N. N.; Khoroshavin, B. I.; Chumakov, N. I.

TITLE: Changing the IAE cyclotron into a controllable-ion-energy mode of
operation

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1964, 28-29

TOPIC TAGS: cyclotron, IAE cyclotron

ABSTRACT: The adoption of rapid energy control in the 1.5-meter IAE cyclotron,
with preservation of a good (± 0.3-0.4%) monoenergetic characteristic and short
duration (2—4 nsec) of accelerated-ion clusters, was predicated upon the following
changes introduced into the cyclotron: (1) Correction of magnetic field by the
currents in additional windings within 5—14 koe; (2) Provision of a dee-type slit
ion optical device suitable for the entire range of accelerated ions; (3) Replacing

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L 27307-65
ACCESSION NR: AP5002140

the VCh-200 h-f oscillator by a GU-300 which can be tuned without additional
neutralization within 8—13 Mc: (4) Introduction of a remote control of dees
position; (5) Correction of optical properties of the system guiding the output
beam. As a result of the above measures, the type and energy of particles can be
changed in less than an hour's time; particulars are tabulated. Orig. art. has:
1 figure and 2 tables.

ASSOCIATION: Institut atomnoy energii (Institute of Atomic Energy)

SUBMITTED: 20Nov63   ENCL: 00   SUB COLE: NP

NO REF SOV: 005   OTHER: 000

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L 27229-65   EWT(m)/EPA(w)-2/EWA(m)-2   Pab-10/Pt-10   IJP(c)

ACCESSION NR: AP5002141   S/0120/64/000/006/0030/0032

AUTHOR: Antonov, A. V.; Blokhov, M. V.; Venikov, N. I.; Kalinin, S. P.;
Kurashov, A. A.; Perov, P. Ya.; Chesalov, A. A.

TITLE: Reducing the repetition frequency of ion clusters in the IAE cyclotron

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1964, 30-32

TOPIC TAGS: cyclotron, IAE cyclotron

ABSTRACT: A system intended for a fourfold reduction of the repetition frequency
of ion clusters on the cyclotron target is described. The ions are deflected in the
vertical plane by a h-f sinusoidal voltage applied to a special deflecting system
placed in the ion duct; admitting the required clusters to the target takes place at
zero-voltage moments. Formulas for designing the deflecting-electrode shape
and calculating the deflecting voltage are supplied. A block diagram of the
electronic system is explained. The system can be tuned within 1.15—1.75 Mc.

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L 27229-65

ACCESSION NR: AP5002141

"The authors wish to thank N. N. Khaldin, V. I. Lamunin, and P. I. Vasil'yev for designing the system; Yu. V. Korshunov for calculating the tuned circuit of the deflecting system; R. A. Ariskina, B. I. Khoroshavin, and Ye. L. Rybakov for their help in the preparation of experiments; and A. A. Ogloblin and V. M. Pankratov for their constant interest in the project." Orig. art. has: 1 figure and 8 formulas.

ASSOCIATION: Institut atomnoy energii (Institute of Atomic Energy)

SUBMITTED: 19Nov63   ENCL: 00   SUB CODE: NP

NO REF SOV: 002   OTHER: 000

Card 2/2

KALINYIN, S.

"Prospective Development of the Electrification of Soviet Railways. (Tr. from the Russian.)" p. 126, (KOZLEKEDESTUDOMANYI SZEMLE, Vol. 3, no. 4, Apr. 1953, Budapest, Hungary)

SO: Monthly List of East European Accessions, LC, Vol. 3, No. 5, May 1954/Unclassified

KALININ, S.S., inzhener; ZHARIN, A.I., inzhener.

Improving the design of motorcar sections. Zhel.dor.transp.
37 no.7:28-29 Jl '56.   (MLRA 9:8)
                    (Railroad motorcars)

KALININ, S.S., inzhener.

Results of operating electric locomotives on single-phase industrial
frequency in France. Zhel.dor.transp. 38 no.10:84-86 O '56. (MLRA 9:11)
(France--Electric locomotives)

KALININ, S.S.

ZAKHARCHENKO, D.D.,dotsent, kandidat tekhnicheskikh nauk; ISAYEV, I.P.,
dotsent, kandidat tekhnicheskikh nauk; KALININ, V.K.,inzhener;
KREST'YANOV, M.Ye.,dotsent, kandidat tekhnicheskikh nauk;
LAKSHTOVSKIY, I.A.,dotsent, kandidat tekhnicheskikh nauk;
MARKVARDT, K.G.,professor, doktor tekhnicheskikh nauk; MEDEL', V.B.,
professor, doktor tekhnicheskikh nauk; MIRONOV, K.A.,inzhener;
MIKHAYLOV, N.M.,dotsent, kandidat tekhnicheskikh nauk; NAKHODKIN, M.D.,
dotsent, kandidat tekhnicheskikh nauk; OZMBLOVSKIY, Ch.S.,
inzhener; OSIPOV, S.I.,inzhener; ROMASHKOV, S.G.,inzhener; SOKOLOV,
L.S.,inzhener; FAMINSKIY, G.V.,kandidat tekhnicheskikh nauk;
SHATSILLO, A.A.,inzhener; SHLYAKHTO, P.N.,dotsent, kandidat
tekhnicheskikh nauk; BOVE, Ye.G.,kandidat tekhnicheskikh nauk, retsenzent;
PERTSOVSKIY, L.M.,inzhener, retsenzent; ALEKSNYEV, A.Ye.,professor,
doktor tekhnicheskikh nauk, retsenzent; BATALOV, N.M.,inzhener,
retsenzent; VINBERG, B.N.,inzhener, retsenzent; GRACHEVA, L.O.,
kandidat tekhnicheskikh nauk, retsenzent; YEVDOKIMOV, A.M.,
inzhener, retsenzent; KALININ, S.S.,inzhener, retsenzent;
TRAKHTMAN, L.M.,kandidat tekhnicheskikh nauk,retsenzent;
PYLENKOV, A.P.,inzhener, retsenzent; GOKHSHTEIN, B.Yu.,kandidat
tekhnicheskikh nauk, retsenzent; IL'IN, I.P.,inzhener, retsenzent;
NAKHODKIN, M.D.,dotsent, kandidat tekhnicheskikh nauk, retsenzent;
TISHCHENKO, A.I.,otvetstvennyy redaktor; BENESHEVICH, I.I.,
kandidat tekhnicheskikh nauk, redaktor; ZOROKHOVICH, A.Ye.,dotsent
kandidat tekhnicheskikh nauk, redaktor; LUTSENKO, Ye.G.,inzhener,
redaktor; ROGOZHIN, A.P.,inzhener, redaktor; SIDOROV, N.I.,
inzhener, redaktor; VERINA, G.P.,tekhnicheskiy redaktor
(Continued on next card)

ZAKHARCHENKO, D.D.---(continued) Card 2.

[Technical manual for railroad workers] Tekhnicheskii
spravochnik zheleznodorozhnika. Red. kollegiia R.G. Granovskii
i dr. Moskva, Gos. transp. zhel-dor. izd-vo. Vol. 9.[Electric
railroad rolling stock] Elektropodvizhnoi sostav zheleznykh
dorog. Otv. red. toma A.I. Tishchenko. 1957. 652 p. (MIRA 10:4)

1. Chlen-korrespondent Akademii nauk SSSR. (for Alekseyev)
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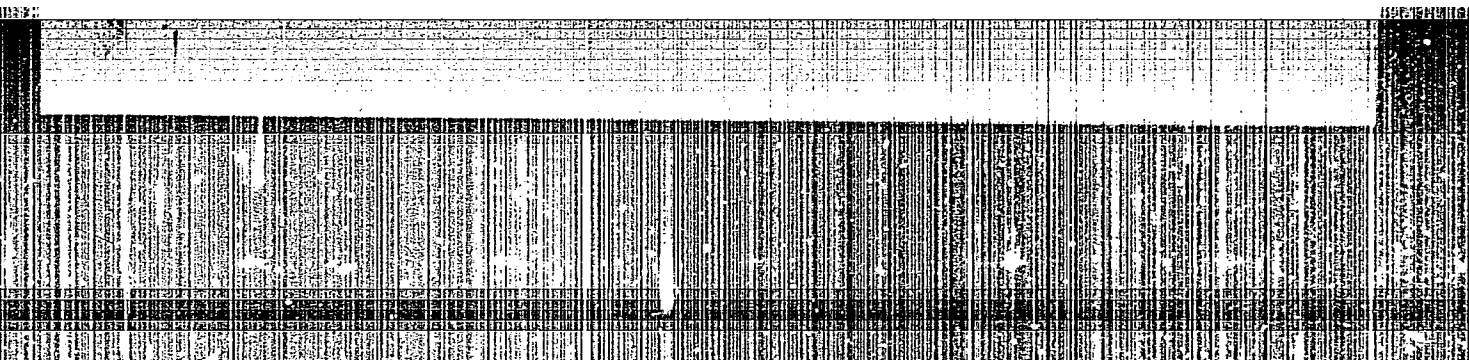
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